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EXAMINER

CREPEAU, J

ART UNIT	PAPER NUMBER
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1745

DATE MAILED:

12/21/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/384,283

Applicant(s)

Inoue et al.

Examiner

Jonathan Crepeau

Group Art Unit

1745



☒ Responsive to communication(s) filed on Aug 27, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-15 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-15 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 8/31/98. It is noted, however, that applicant has not filed a certified copy of the application as required by 35 U.S.C. 119(b).

Claim Objections

2. Claims 2 and 4 are objected to because of the following informalities: in line 2 of claim 2 and line 1 of claim 4, "a projection" should be changed to "the projection" in order to clarify the projection previously defined in claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 8 recites the limitation "the central protrusion" in line 2. There is insufficient antecedent basis for this limitation in the claim.

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Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(c) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 1-3 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Kurokawa et al (U.S. Patent 6,139,986). In Figure 1 and in column 7, line 21-column 8, line 5, the reference teaches a battery comprising a circular cylindrical shaped case (63, 82) and a spirally-wound electrode assembly. A lead plate (79) is welded to a projection jutting from the central bottom surface of the external case at point "A". The disclosure of welding inherently meets the limitation in instant claim 1 which recites that an energy beam is applied to the external case from outside the external case at the point of contact. The protruding surface of the projection is curved around the "central protrusion."

Thus, the instant claims are anticipated.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa et al.

The reference is applied to claims 1-3 and 8 for the reasons stated in paragraph 6 above.

The reference does not explicitly teach that the projection is provided on a "side-wall" of the external case, or that the projection juts out in a conical shape.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would reasonably be able to ascertain that the projection is provided on a "side-wall" of the external case. If the battery is rotated 90 degrees in either direction, it is seen that the projection is in fact provided on a side wall of the case. As presently drafted, the instant claims do not include limitations that define the top, bottom, and sides of the battery case. Accordingly, the limitation of a projection provided on the side wall of the external case is not considered to distinguish over the Kurokawa et al. reference.

Regarding the conical shape of the projection recited in instant claim 9, this recitation is not seen to patentably distinguish over the reference. The courts have generally held that changes in shape, such as the projection of Kurokawa et al., are obvious in the absence persuasive evidence that the claimed configuration is significant (see also MPEP §2144.04).

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9. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa et al. as applied to claims 1-3 and 8 above, and further in view of Machida et al (U.S. Pat. 5,443,925).

Kurokawa et al. do not explicitly teach that the external case is elliptical or rectangular.

Machida et al. teach a battery comprising an elliptical or rectangular external case in column 1, lines 60-62.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because as exemplified by the patent of Machida et al., elliptical and rectangular cases are well-known in the art. In column 2, line 49, Machida et al. disclose that these configurations provide for reliable electrical connection of the spiral electrode unit with the external case. Accordingly, the artisan would have sufficient motivation to use either of these shapes as the external case of Kurokawa et al.

10. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa et al. as applied to claims 1-3 and 8 above, and further in view of Dorogi et al (U.S. Patent 4,767,682).

Kurokawa et al. do not explicitly teach that the lead plate has a U-shaped cutout in the central portion which is surrounded by holes having projecting portions which make contact with the electrode assembly.

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In Figures 13 and 14 and in column 9, lines 48-68, Dorogi et al. teach a cylindrical lead plate for a battery comprising a U-shaped cutout with a projecting portion (76) which electrically contacts the external terminal, and circular projections (80) which make contact with the electrode assembly.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because as exemplified by the patent of Dorogi et al., the instantly claimed lead plate configuration is well-known in the art. In the cited passage, Dorogi et al. disclose that the width of the strip (78) on the projecting portion may be adjusted in order to break upon passage of a specific amount of current. Accordingly, the artisan, realizing that this configuration provides good overcharge protection in a secondary battery, would have sufficient motivation to use the lead plate of Dorogi et al. in the battery of Kurokawa et al.

Although instant claim 13 recites that the plate has holes with projections around the peripheries of the holes, the projections (80) of Dorogi et al. are functionally equivalent to the claimed projections and are therefore considered to render the claimed projections obvious to a skilled artisan.

11. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa et al. as applied to claims 1-3 and 8 above, and further in view of Hartmann et al (U.S. Patent 4,239,837).

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Kurokawa et al. do not explicitly teach that an electrically conductive, anti-corrosive coating is applied to the external case in the region of energy beam application.

Hartmann et al. teach a battery comprising an external case having an outer coating of an anti-corrosive silicate or oxide in column 2, line 47-column 3, line 4.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because as exemplified by the patent of Hartmann et al., anti-corrosive coatings are known in the art for coating the external portions of battery cases. In the cited passage, Hartmann et al. disclose that these coatings provide additional security if the cell wall corrodes from the inside. Accordingly, the artisan would have sufficient motivation to apply an anti-corrosive coating to the external case of Kurokawa et al.

Although Hartmann et al. do not explicitly teach that the coating is electrically conductive, the disclosure of oxides and silicates would render this limitation obvious to a person of ordinary skill in the art. Numerous oxides and silicates possess at least some electrical conductivity; therefore the artisan could reasonably ascertain that the coating could be electrically conductive.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Omaru et al., U.S. Patent 5,916,707.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisors, Steve Kalafut or Carol Chaney, can be reached at (703) 308-0433 and (703) 305-3777, respectively. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900.

Documents may be faxed to (703) 306-3429. The official fax number for documents of extreme importance is (703) 305-3599 (it will take longer to receive documents faxed to this number; therefore the first number is preferred).

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JSC

December 18, 2000


CAROL CHANEY
PRIMARY EXAMINER